General

Guideline Title

Gallstone disease.

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Gallstone disease. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. 19 p. (Clinical guideline; no. 188).

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- December 14, 2016 – General anesthetic and sedation drugs : The U.S. Food and Drug Administration (FDA) is warning that repeated or lengthy use of general anesthetic and sedation drugs during surgeries or procedures in children younger than 3 years or in pregnant women during their third trimester may affect the development of children's brains. Consistent with animal studies, recent human studies suggest that a single, relatively short exposure to general anesthetic and sedation drugs in infants or toddlers is unlikely to have negative effects on behavior or learning. However, further research is needed to fully characterize how early life anesthetic exposure affects children's brain development.

Recommendations

Major Recommendations

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by the Internal Clinical Guidelines team on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

The wording used in the recommendations in this guideline (for example words such as 'offer' and 'consider') denotes the certainty with which the recommendation is made (the strength of the recommendation) and is defined at the end of the "Major Recommendations" field.

Diagnosing Gallstone Disease

Offer liver function tests and ultrasound to people with suspected gallstone disease, and to people with abdominal or gastrointestinal symptoms that have been unresponsive to previous management.

Consider magnetic resonance cholangiopancreatography (MRCP) if ultrasound has not detected common bile duct stones but the:

- Bile duct is dilated and/or
- Liver function test results are abnormal

Consider endoscopic ultrasound (EUS) if MRCP does not allow a diagnosis to be made.

Refer people for further investigations if conditions other than gallstone disease are suspected.

Managing Gallbladder Stones

Reassure people with asymptomatic gallbladder stones found in a normal gallbladder and normal biliary tree that they do not need treatment unless they develop symptoms.

Offer laparoscopic cholecystectomy to people diagnosed with symptomatic gallbladder stones.

Offer day-case laparoscopic cholecystectomy for people having it as an elective planned procedure, unless their circumstances or clinical condition make an inpatient stay necessary.

Offer early laparoscopic cholecystectomy (to be carried out within 1 week of diagnosis) to people with acute cholecystitis.

Offer percutaneous cholecystostomy to manage gallbladder empyema when:

- Surgery is contraindicated at presentation and
- Conservative management is unsuccessful

Reconsider laparoscopic cholecystectomy for people who have had percutaneous cholecystostomy once they are well enough for surgery.

Managing Common Bile Duct Stones

Offer bile duct clearance and laparoscopic cholecystectomy to people with symptomatic or asymptomatic common bile duct stones.

Clear the bile duct:

- Surgically at the time of laparoscopic cholecystectomy or
- With endoscopic retrograde cholangiopancreatography (ERCP) before or at the time of laparoscopic cholecystectomy

If the bile duct cannot be cleared with ERCP, use biliary stenting to achieve biliary drainage only as a temporary measure until definitive endoscopic or surgical clearance.

Use the lowest-cost option suitable for the clinical situation when choosing between day-case and inpatient procedures for elective ERCP.

Patient, Family Member and Carer Information

Advise people to avoid food and drink that triggers their symptoms until they have their gallbladder or gallstones removed.

Advise people that they should not need to avoid food and drink that triggered their symptoms after they have their gallbladder or gallstones removed.

Advise people to seek further advice from their general practitioner (GP) if eating or drinking triggers existing symptoms or causes new symptoms to develop after they have recovered from having their gallbladder or gallstones removed.

Definitions:

Strength of Recommendations

Some recommendations can be made with more certainty than others. The Guideline Development Group (GDG) makes a recommendation based on the trade-off between the benefits and harms of an intervention, taking into account the quality of the underpinning evidence. For some interventions, the GDG is confident that, given the information it has looked at, most patients would choose the intervention. The wording used in the recommendations in this guideline denotes the certainty with which the recommendation is made (the strength of the recommendation).

Interventions That Must (or Must Not) Be Used

The GDG usually uses 'must' or 'must not' only if there is a legal duty to apply the recommendation. Occasionally the GDG uses 'must' (or 'must not') if the consequences of not following the recommendation could be extremely serious or potentially life threatening.

Interventions That Should (or Should Not) Be Used – a 'Strong' Recommendation

The GDG uses 'offer' (and similar words such as 'refer' or 'advise') when confident that, for the vast majority of patients, an intervention will do more good than harm, and be cost effective. Similar forms of words (for example, 'Do not offer…') are used when the GDG is confident that an intervention will not be of benefit for most patients.

Interventions That Could Be Used

The GDG uses 'consider' when confident that an intervention will do more good than harm for most patients, and be cost effective, but other options may be similarly cost effective. The choice of intervention, and whether or not to have the intervention at all, is more likely to depend on the patient's values and preferences than for a strong recommendation, and so the healthcare professional should spend more time considering and discussing the options with the patient.

Recommendation Wording in Guideline Updates

NICE began using this approach to denote the strength of recommendations in guidelines that started development after publication of the 2009 version of 'The guidelines manual' (January 2009).

Clinical Algorithm(s)

An algorithm titled "Diagnosing Symptomatic Gallstone Disease" is provided in the full version of the guideline (see the "Availability of Companion Documents" field).

In addition, a National Institute for Health and Care Excellence (NICE) care pathway titled "Gallstone Disease Overview" is available from the NICE Web site .

Scope

Disease/Condition(s)

Gallstone disease

Guideline Category

Diagnosis

Evaluation

Management

Treatment

Clinical Specialty

Family Practice

Gastroenterology

Internal Medicine

Radiology

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To offer best practice advice on the care of adults with gallstone disease

Target Population

Adults with or suspected of having gallstone disease

Interventions and Practices Considered

Diagnosis

1. Liver function tests and ultrasound
2. Magnetic resonance cholangiopancreatography (MRCP)
3. Endoscopic ultrasound (EUS)
4. Referral for further investigation

Management

1. No treatment for asymptomatic gallbladder stones found in a normal gall bladder
2. Laparoscopic cholecystectomy for symptomatic gallbladder stones
3. Percutaneous cholecystostomy
4. Bile duct clearance
    - Surgically at time of laparoscopic cholecystectomy
    - Endoscopic retrograde cholangiopancreatography (ERCP)
5. Biliary stenting
6. Avoidance of food and drink triggers
7. Follow-up for new symptoms

Major Outcomes Considered

- Sensitivity and specificity of diagnostic tests
- Onset of new symptoms
- Length of stay
- Complications, such as bile duct injury
- Adverse effects
- Morbidity and mortality
- Quality of life

- Cost-effectiveness

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by an Internal Clinical Guidelines team on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

This guideline was developed in accordance with the process set out in 'The guidelines manual (2012)' (see the "Availability of Companion Documents" field). There is more information about how NICE clinical guidelines are developed on the NICE website. A booklet, 'How NICE clinical guidelines are developed: an overview for stakeholders, the public and the NHS' is available (see the "Availability of Companion Documents" field). In instances where the guidelines manual does not provide advice, additional methods are used and are described below.

A total of 8 review questions (1, 2, 3, 4a, 4b, 4c, 5, 6) were identified. A systematic literature was conducted for each review question. Identified references were reviewed against the inclusion and exclusion criteria as described in the review protocols. A literature search for health economic evidence was also completed for all review questions. Evidence reviews, search strategies and inclusion criteria are detailed in the full version of the guideline and the appendices.

Number of Source Documents

Clinical Literature Review

- Review Question 1: One study met the eligibility criteria and was included.
- Review Question 2: Overall, 23 studies met the eligibility criteria and were included in the review
- Review Question 3: One prospective cohort study met the eligibility criteria and was included
- Review Question 4a, 4b, 4c and 5: 47 references met the overall inclusion criteria.
- Review Question 6: Five studies met the eligibility criteria and were included.

Health Economic Literature Review

- Review Question 1: No health economic studies were found for Question 1.
- Review Question 2: 2 health economic studies were found.
- Review Question 3: No health economic studies were found for Question 3.
- Review Question 4a, 4b, 4c and 5: 1 study was retained for Question 4b and 1 study was retained for Question 5.
- Review Question 6: No health economic studies were found for Question 6.

See also Appendix E in the full guideline appendices (see "Availability of Companion Documents" field) for flow diagrams of clinical and health economic literature reviews, which detail the total number of studies included for each review question.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Overall Quality of Outcome Evidence in Grading of Recommendations Assessment, Development and Evaluation (GRADE)

Level	Description
High	Further research is very unlikely to change confidence in the estimate of effect.
Moderate	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Low	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.
Very Low	Any estimate of effect is very uncertain.

Methods Used to Analyze the Evidence

Meta-Analysis

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by an Internal Clinical Guidelines team on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

Methods for Combining Diagnostic Evidence

Meta-analysis of diagnostic test accuracy data was conducted in accordance with the process set out in the Cochrane Handbook for Systematic Reviews of Diagnostic Test Accuracy.

A hierarchical, bivariate model was performed in R using MADA code (R Code Team 2012) to generate pooled estimates of sensitivity and specificity.

Methods for Combining Direct and Indirect Evidence (Network Meta-Analysis)

Conventional 'pairwise' meta-analysis involves the statistical combination of direct evidence about pairs of interventions that originate from two or more separate studies (for example, where there are two or more studies comparing A vs B).

In situations where there are more than two interventions, pairwise meta-analysis of the direct evidence alone is of limited use. This is because multiple pairwise comparisons need to be performed to analyse each pair of interventions in the evidence, and these results can be difficult to interpret. Furthermore, direct evidence about interventions of interest may not be available. For example studies may compare A vs B and B vs C, but there may be no direct evidence comparing A vs C. Network meta-analysis overcomes these problems by combining all evidence into a single, internally consistent model, synthesising data from direct and indirect comparisons, and providing estimates of relative effectiveness for all comparators and the ranking of different interventions.

The evidence in Section 4.6 in the full version of the guideline was analysed using network meta-analysis, to inform decisions about managing common bile duct stones.

Synthesis

Hierarchical Bayesian Network Meta-Analysis (NMA) was performed using WinBUGS version 1.4.3. The models used reflected the recommendations of the NICE Decision Support Unit's Technical Support Documents (TSDs) on evidence synthesis, particularly TSD 2 ('A generalised linear modelling framework for pairwise and network meta-analysis of randomised controlled trials'; see http://www.nicedsu.org.uk). The WinBUGS code provided in the appendices of TSD 2 was used without substantive alteration to specify synthesis models.

Results were reported summarising 10,000 samples from the posterior distribution of each model, having first run and discarded 50,000 'burn-in' iterations. Three separate chains with different initial values were used.

Prior Distributions

Non-informative prior distributions were used in all models. Trial-specific baselines and treatment effects were assigned N(0, 1000) priors, and the between-trial standard deviations used in random-effects models were given U(0, 5) priors. These are consistent with the recommendations in TSD 2 for dichotomous outcomes.

Choice of Reference Option

To undertake an NMA, one option in the network must be specified as a common 'reference' option. The model will estimate the effects of all other options in comparison this. The choice of reference option is mathematically arbitrary; however, it may have implications for the computational efficiency of the network and/or the interpretability of outputs. For these reasons, the option that had been compared with the highest number of the other options was chosen as the reference.

Reported Outputs

The NMA outputs shown in this guideline (see Appendix H.7.5 in the full guideline appendices [see the "Availability of Companion Documents" field]) are as follows:

- Network diagram, showing the availability of evidence. In these diagrams:
    - Node size is proportional to the total number of participants across the evidence base that were randomised to receive the treatment in question
    - The width of connecting lines is proportional to the number of trial-level comparisons available.
- Table of input data, showing the evidence used in the model.
- Relative effect matrix, showing an estimate of effect for each intervention compared with each of its comparators. An estimate of effect based on direct evidence only (using pairwise frequentist meta-analysis with the same fixed or random-effects models as the NMA) is also presented for comparisons where data are available.
- Plot of the relative effectiveness, including the results of the NMA of each intervention compared with the reference treatment (see Appendix E.2.4 in the full guideline appendices) and any direct estimate available for the same comparison.
- Tabulated rank probabilities, giving the probability of each treatment being best (that is, ranked #1) and its median rank with 95% credible interval (CrI). In these outputs, higher ranking always reflects what is best for the patient (for example, higher rates of disease eradication, lower rates of adverse events, higher IQ, lower blood pressure, and so on).
- Histograms demonstrating the probability of each treatment being at each possible rank ('rankograms')

Applying Grading of Recommendations Assessment, Development and Evaluation (GRADE) to Network Meta-Analysis

The use of GRADE to assess the quality of studies addressing a particular review question for pairwise comparisons of interventions is relatively established. However, the use of GRADE to assess the quality of evidence across a network meta-analysis is still a developing methodology. While most criteria for pairwise meta-analyses still apply, it is important to adapt some of the criteria to take into consideration additional factors, such as how each 'link' or pairwise comparison within the network applies to the others. As a result, the following was used when modifying the GRADE framework to a network meta-analysis.

Risk of Bias

In addition to the usual criteria to assess the risk of bias or 'limitations' of studies for each pairwise analysis within a network, the risk of bias was assessed for each direct comparison and assessed to see how it would affect the indirect comparisons. In addition, there was an assessment of treatment effect modifiers to see if they differed between links in the network.

For network meta-analyses with a large proportion of studies that were judged to be susceptible to bias, some downgrading decision rules were applied.

- If 50% or more studies in the network were inadequate or unclear for a particular parameter of quality, the outcome was downgraded by 1 level.
- As with pairwise meta-analyses, studies with differences in concomitant treatment between groups, or which did not report concomitant treatment between groups (where permitted), were treated with caution. Additionally, if there were differences in concomitant treatment among the studies included in different links across the network, the overall outcome was downgraded.

Inconsistency

Inconsistency was assessed for the heterogeneity of individual pairwise comparisons in the network, and also between direct and indirect comparisons where both were available (that is, where there were "loops" in the network).

Heterogeneity across studies for each direct pairwise meta-analysis was assessed using I^2. This allowed for the assessment of heterogeneity within the included studies using the following decision rules:

- If there was considerable heterogeneity for 1 link or more in a network, the outcome was downgraded 1 level.
- If there was more than 1 link in the network with considerable, substantial or moderate heterogeneity, consideration was given to downgrading 2 levels.

To assess for consistency in each pairwise comparison where both direct and indirect evidence are available, the values of the direct and indirect estimates were compared to see if they were similar.

The overall value of tau was also assessed to compare heterogeneity across the network.

Indirectness

As with pairwise meta-analyses, studies included in a network were assessed for how well they fit the PICO (population, intervention, comparator, outcome) specified in the review protocol.

Imprecision

Imprecision was assessed for a number of variables:

- Sufficient head-to-head trials in the network.
- Sufficient number of studies to form the network (if there was a high proportion of 'links' formed with only 1 trial, the outcome was downgraded).
- Overall certainty/uncertainty of the effect estimates (size of credible intervals, including for each drug compared with the reference option, and size of credible intervals for the overall rankings within the network).
- For networks, imprecision was considered around both the direct and indirect effect estimates.

When assessing imprecision for pairwise comparisons, or for networks with only 1 trial for all 'links' in the network, the confidence interval around the direct estimate was used (since the results were largely led by a non-informative prior).

See also Appendix H in the full guideline appendices for further details on data analysis.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by an Internal Clinical Guidelines team on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover.

This guideline was developed by the NICE Internal Clinical Guidelines Programme. The Internal Clinical Guidelines Programme worked with a Guideline Development Group, comprising healthcare professionals (including consultants, general practitioners [GPs] and nurses), patients and carers, and technical staff, which reviewed the evidence and drafted the recommendations. The recommendations were finalised after public consultation.

The methods and processes for developing NICE clinical guidelines are described in the guidelines manual (see the "Availability of Companion Documents" field). See the full guideline for a review of evidence to recommendations for each review question.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendations

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Recommendation Wording in Guideline Updates

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Cost Analysis

Health Economic Evidence

See the full guideline for a health economic evidence review as it applies to each review question (see the "Availability of Companion Documents"). Also see Appendix J in the full guideline appendices (see the "Availability of Companion Documents") for the full health economics report.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

The guideline was validated through two consultations.

1. The first draft of the guideline (the full guideline and the National Institute for Health and Care Excellence [NICE] guideline) were consulted with Stakeholders and comments were considered by the Guideline Development Group (GDG).
2. The final consultation draft of the full guideline, the NICE guideline and the Information for the Public were submitted to stakeholders for final comments.

The final draft was submitted to the Guideline Review Panel for review prior to publication.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Refer to the "Trade Off Between Clinical Benefits and Harms" sections in the full version of the guideline (see the "Availability of Companion Documents" field) for benefits of specific interventions.

Potential Harms

- Endoscopic ultrasound (EUS) is an invasive test and procedural errors could result in adverse effects for the patient (such as perforation and even death). The test is normally performed with the patient under sedation, which carries its own risks to the patient, and requires the patient to be accompanied by a responsible adult for 24 hours after sedation. People who do not have a responsible adult to escort them will need to be admitted to hospital.
- Many patients report a continuation of symptoms or the onset of new symptoms after laparoscopic cholecystectomy, and these affect quality of life

Refer to the "Trade Off Between Clinical Benefits and Harms" sections in the full version of the guideline (see the "Availability of Companion Documents" field) for harms of specific interventions.

Qualifying Statements

Qualifying Statements

- This guidance represents the view of National Institute for Health and Care Excellence (NICE), which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summaries of product characteristics of any drugs.
- Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.
- Treatment and care should take into account individual needs and preferences. Patients should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. Healthcare professionals should follow the Department of Health's advice on consent. If someone does not have capacity to make decisions, healthcare professionals should follow the code of practice that accompanies the Mental Capacity Act and the supplementary code of practice on deprivation of liberty safeguards.
- NICE has produced guidance on the components of good patient experience in adult NHS services. All healthcare professionals should follow the recommendations in NICE's guidance on patient experience in adult NHS services.

Implementation of the Guideline

Description of Implementation Strategy

The National Institute for Health and Care Excellence (NICE) has developed tools to help organisations implement this guidance (see http://www.nice.org.uk/guidance/cg188; see also the "Availability of Companion Documents" field).

Key Priorities for Implementation

The following recommendations have been identified as priorities for implementation.

- Reassure people with asymptomatic gallbladder stones found in a normal gallbladder and normal biliary tree that they do not need treatment unless they develop symptoms.
- Offer early laparoscopic cholecystectomy (to be carried out within 1 week of diagnosis) to people with acute cholecystitis.
- Reconsider laparoscopic cholecystectomy for people who have had percutaneous cholecystostomy once they are well enough for surgery.
- Clear the bile duct:
  - Surgically at the time of laparoscopic cholecystectomy or
  - With endoscopic retrograde cholangiopancreatography (ERCP) before or at the time of laparoscopic cholecystectomy
- If the bile duct cannot be cleared with ERCP, use biliary stenting to achieve biliary drainage only as a temporary measure until definitive endoscopic or surgical clearance.

Implementation Tools

Audit Criteria/Indicators

Clinical Algorithm

Foreign Language Translations

Mobile Device Resources

Patient Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Gallstone disease. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. 19 p. (Clinical guideline; no. 188).

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2014 Oct

Guideline Developer(s)

National Institute for Health and Care Excellence (NICE) - National Government Agency [Non-U.S.]

Source(s) of Funding

National Institute for Health and Care Excellence (NICE)

Guideline Committee

Guideline Development Group

Composition of Group That Authored the Guideline

Guideline Development Group Members: Gary McVeigh (*Chair*), Professor of Cardiovascular Medicine, Queen's University Belfast/Consultant Physician, Belfast, Health and Social Care Trust; Elaine Dobinson Evans, Patient/carer member; Simon Dwerryhouse, Consultant Upper Gastrointestinal and Bariatric Surgeon, Gloucestershire Royal Hospital; Rafik Filobbos (from November 2013), Consultant Radiologist with special interest in Gastrointestinal/Hepatobiliary imaging, North Manchester General Hospital; Imran Jawaid, Principal GP, Hadlow, Tonbridge; Angela Madden (co-opted expert), Professional Lead for Nutrition and Dietetics, University of Hertfordshire; Peter Morgan, Consultant Anaesthetist, St James's University Hospital; Gerri Mortimer, Lead Hepatobiliary Clinical Nurse Specialist, Derby Hospitals NHS Foundation Trust; Kofi Oppong, Consultant Gastroenterologist, Newcastle Hospitals NHS Trust; Charles Rendell, Patient/carer member; Richard Sturgess, Consultant Hepatologist and Physician, University Hospital Aintree; Giles Toogood, Consultant Hepatobiliary and Liver Transplant Surgeon, St James' University Hospital; Luke Williams, Consultant Gastrointestinal Radiologist, Salford Royal NHS Foundation trust

Financial Disclosures/Conflicts of Interest

See Appendix A in the full guideline appendices (see the "Availability of Companion Documents" field) for Guideline Development Group declarations of interest.

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available for download in ePub and eBook formats from the NICE Web site .

Availability of Companion Documents

The following are available:

- Gallstone disease: diagnosis and management of cholelithiasis, cholecystitis and choledocholithiasis. Full guideline. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. 102 p. (Clinical guideline; no 188). Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site .
- Gallstone disease: diagnosis and management of cholelithiasis, cholecystitis and choledocholithiasis. Appendices A-K. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. (Clinical guideline; no 188). Electronic copies: Available from the NICE Web site .
- Gallstone disease. Baseline assessment tool. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. (Clinical guideline; no 188). Electronic copies: Available from the NICE Web site .
- Gallstone disease. Clinical audit tool. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. (Clinical guideline; no 188). Electronic copies: Available from the NICE Web site .
- Gallstone disease. Costing statement. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. 9 p. (Clinical guideline; no 188). Electronic copies: Available from the NICE Web site .
- The guidelines manual 2012. London (UK): National Institute for Health and Care Excellence (NICE); 2012 Nov. Electronic copies: Available from the NICE Web site .

Patient Resources

The following is available:

- Gallstone disease. Information for the public. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Oct. (Clinical guideline; no. 188). Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available for download in eBook and ePub formats from the NICE Web site . Also available in Welsh from the NICE Web site .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This NGC summary was completed by ECRI Institute on March 18, 2015. This summary was updated by ECRI Institute on February 15, 2017 following the U.S. Food and Drug Administration advisory on general anesthetic and sedation drugs.

The National Institute for Health and Care Excellence (NICE) has granted the National Guideline Clearinghouse (NGC) permission to include summaries of their clinical guidelines with the intention of disseminating and facilitating the implementation of that guidance. NICE has not yet verified this content to confirm that it accurately reflects that original NICE guidance and therefore no guarantees are given by NICE in this regard. All NICE clinical guidelines are prepared in relation to the National Health Service in England and Wales. NICE has not been involved in the development or adaptation of NICE guidance for use in any other country. The full versions of all NICE guidance can be found at www.nice.org.uk .

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